L-127
Revised

Chemical Control of

Mesquite

Mesquite aerially sprayed four years ago with 2,4,5-T in diesel oil.

TEXAS AGRICULTURAL EXTENSION SERVICE
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Kerosene has been used many years for mesquite control. For most effective results, it should be applied around the base of the tree in sufficient quantity to penetrate the underground buds below the crown. This may require one-third gallon of oil or more for big trees. Kerosene or diesel oil, whichever is cheaper, works best on sandy or gravelly soils. On bottomland or heavy clay soils the amount of oil required is excessive and kills may be poor. Kerosene treatment still can be recommended as probably the most effective method of control for mesquite on porous open soils where the trees are large, single stemmed and occur in stands up to 100 trees per acre. Treat during the hot summer months when the surface soil is dry rather than when it is wet and cold.

Mechanical treatments using root cutters, anchor chains and root plows give some immediate relief, but these methods may be expensive. Sometimes the grass turf is torn up and the regrowth from broken-off trees may make the problem more serious than before. On large, single-stemmed trees, chaining is economical and effective. Often a combination of mechanical and chemical treatments may give the most control for the least cost per acre per year. A thorough study should be made for the best methods to be used.

Chemical Control of Mesquite

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2,4-D. Experimental results show that none of the forms of 2,4-D are effective for mesquite control.

2,4,5-T. Work at the Spur Station and off-station ranch trials and test demonstrations conducted by the Texas Agricultural Experiment Station over the State in the past five years show that 2,4,5-T has definite possibilities for mesquite control.

Silvex. After three years experimental work, this herbicide appears to be as effective for aerial control of mesquite as 2,4,5-T, but it is less hazardous to broad-leaved plants. Until further research is completed, the same precautions should be used with silvex as with 2,4,5-T.

2,4,5-T and silvex are both nonpoisonous to man and livestock and do not kill grass at the rate given for controlling mesquite. Aerial application is the cheapest method of control where adapted.

Aerial Application

1. Mesquite should be sprayed with at least 1/3 pound 2,4,5-T or silvex, mixed in 1/2 gallon of diesel oil and enough water to make 3 gallons of spray solution per acre. The swath width should not exceed 60 feet.

2. The proper time for application is 7 to 11 weeks (50-80 days) after the leaves first appear in the spring. The chemical should not be applied when wind velocities exceed 12 miles per hour due to the danger of drift. If rain falls during the spray season, wait 20 to 30 days to give the new leaves a chance to become developed before spraying.

3. Best kills are obtained with good soil moisture and lush growth of mesquite. If drouth prevails, *do not* spray - results will be disappointing. If the trees are in poor foliage which may be the result of hail, frost or insect damage, spraying should be delayed or postponed until the next year.

4. Mesquite growing on sandy soils gives higher percent kills. Clay pans close to the surface and heavy bottomland soils appear to limit translocation of the chemical.

5. These chemicals are *hazardous* to broad-leaved plants, such as cotton, vegetables and citrus trees. They *should not* be used when there is danger of drift to susceptible plants.

6. Experienced operators with equipment adapted to applying the chemical in coarse droplets at tree top height should be employed.

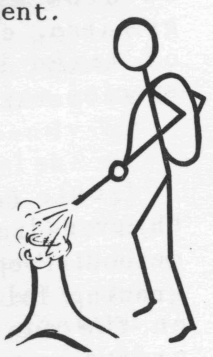
7. At the given concentration and rate, these chemicals are effective on many species of range weeds as well as mesquite, but are not effective on other brush species such as blackbrush, whitebrush, granjeno, cedar and oak. In an area of mixed brush, controlling one species may not be a sound practice.

8. *Control* of mesquite rather than eradication results from this method. Proper stocking and deferred grazing following treatment lengthen the control period. Livestock prefer sprayed areas and may overgraze them, so spray all of a pasture at one time for better management. Rest the treated area during the growing season to give the grasses a chance to reseed and prevent overgrazing.

Increased carrying capacity may be expected after the first year. Another spraying may be needed in 5 to 10 years to control the sprouts and new seedlings depending largely on the management following. Make the treatment last as long as possible to secure the most control per dollar spent. Resprouts should be head-high before retreatment is advisable. Small many-stemmed brush 3 to 5 feet tall is more easily killed. Good control of vigorous, large trees can be secured under favorable conditions.

Ground Application

2, 4, 5-T can be applied to individual mesquite trees with fairly effective results. This method might be used by an operator with a small acreage to treat, close to susceptible crops or around fields, water lots or corrals. It should not be used within one mile of broad-leaved plants during the growing season. Mix 1 pound of 2, 4, 5-T ester in 10 gallons of diesel oil or kerosene. A 3 to 5 gallon knapsack sprayer can be used for individual tree treatment.



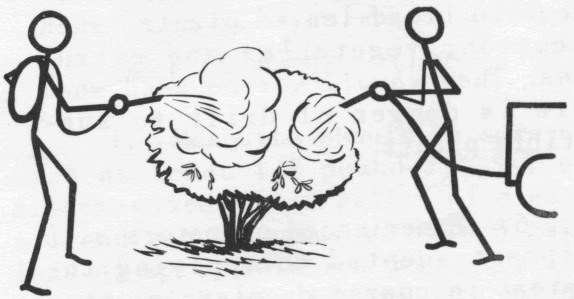
1. *Cut Stump.* Most effective results are secured by cutting off the trees and applying the above mixture to the cut-off stubs and stumps until runoff occurs. A gallon of the mixture should treat 40 to 50 average-size trees at a cost of about three-fourths cent per tree for material alone.

2. *Trunk base treatment.* Reasonably effective results can be secured by spraying thoroughly all the way around the mesquite trunks from ground level up to 12 inches high. Let the solution soak down around the crown. If one side of the trunk is missed, it will probably sprout on that side. A gallon of the mixture should treat 20 to 30 average-size mesquite trees at a cost of one and one-half cents each for material alone. More chemical is required with this method but the labor of cutting the trees

is saved. On trees over 6 inches thick, frilling (over-lapping ax cuts all the way around the trees) and treating in the frill gives quicker, cheaper and more effective results.

Both cut-surface, trunk and frill treatments can be done at any season of the year, but spring and summer look best. The main thing is do it during a dry time. These methods give control of mesquite for one-half of the cost of kerosene treatment. Spraying is preferred over pouring of the mixture because too much is wasted. High pressure is not desired -- coarse droplets are preferred. Low volatile esters of 2,4,5-T should be used to reduce hazards to susceptible crops.

3. *Foliage application.* Hand sprayers and cattle sprayers can be used for foliage application on small areas. Leaves and stems should be covered thoroughly with the spray solution. The chemical should be applied in the active growth stage in the spring under favorable mois - ture conditions. Mix 1 pound low volatile ester of 2,4,5-T or silvex in 50 gallons of *water* and spray the foliage until it is thoroughly wet. This kind of treatment can be used best on small areas not adapted for aerial application and on mesquite brush or sprouts 3 to 5



feet high. Care must be taken that drift will not harm susceptible plants as provided in the State Herbicide Law.

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